from the experiments made, has the power to keep the disease in subjection if not to cure, and hence must be regarded as valuable. The treatment is slow, occupying months or, more often, years.

On the Pathology and Treatment of Leprosy.—Rost (*Brit. Med. Journ.*, February 11, 1905, p. 294) discusses the culture of the lepra bacillus and the production of its antitoxin. The injections of the product (so-called "leproline") caused in lepers an active febrile reaction, a rapid disappearance of the patches devoid of color, and the cure of the ulcerations. In the anæsthetic areas and regions sensibility returned immediately. Amelioration of symptoms followed in all cases promptly, and in four cases there was complete cure of the disease, and in one case after a single injection. The remedy is an extract analogous to the tuberculin of Koch.

Framboesia Tropica.—Hengler (*Dermatologische Zeitschrift*, September, 1905, p. 602) gives an interesting article on this disease as met with in Sumatra. He differentiates it very clearly from syphilis (with which disease it has often been confounded). It is a contagious, infectious, autoinoculable disease, with an incubation period and with a great variety of general and local symptoms, the cutaneous being very marked, distinctive, and frequently severe. Potassium iodide and Zittmann's decoction of the woods prove valuable, and sometimes mercury is useful. The chief interest in the paper is its clear separation from syphilis. Its cause is not known.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF
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The Latency of Tetanus Spores in the Animal Body.—Tarozzi (*Cent. f. Bakt. u Parasit. Orig.*, 1906, Bd. xl. p. 451) injected subcutaneously into rabbits modified cultures of the tetanus bacillus containing spores, and found that the tetanus bacilli passed into the blood and were carried to the various organs, where spores could be demonstrated long after the original dose was given. The spores were found most frequently in the liver and there they remained longest. They were not numerous, but could be demonstrated by making cultures from small bits of the organ. Not only were these latent spores visible, but they produced toxin in cultures sufficient to kill rabbits in 1 to 1.5 c.c. doses and guinea-pigs in smaller amounts. The question then arose as to whether it was possible for the spores remaining latent in the body to multiply and give rise to toxic symptoms. Experiments on rabbits previously injected with weakened tetanus culture showed that if by some means, such as the injection of lactic acid, necrosis of tissue was produced, the animals died with tetanic symptoms. At autopsy many tetanus bacilli were found in the necrotic tissue of the organ injected. The author believes that under these conditions the spores find a suitable medium in the necrotic material for growth and hence produce toxins. He suggests that the so-called rheumatic or spontaneous tetanus in man may be due to the lighting up of a latent infection acquired long prior to the onset of the tetanic symptoms.

Newer Clinico-bacteriological Experiences in Typhoid and Paratyphoid Fever.—Brion and Kayser (*Deutsches Archiv. f. klin. Med.*, 1906, lxxxv. p. 525) report their experiences with a series of two hundred cases of typhoid and paratyphoid fever. The results of their studies of agglutination reactions and of cultures from the blood, stools, and urine are given. In their agglutinations they consider a reaction of the organisms to the serum in 1:100 dilution as positive. Both macroscopic and microscopic methods were used.

In typhoid fever they obtained a positive agglutination with typhoid bacilli in 50 per cent. of ninety-one cases tested on the eighth day of disease, 84 per cent. of one hundred and twenty-one were positive when tested on the fifteen day, and 95 per cent. were positive on the twenty-second day of the disease. This well shows how the value of the agglutination test as a means of diagnosis increases as the disease progresses. The earliest successful agglutination was on the third day, when three cases reacted positively. In one hundred and thirty-eight positive agglutinations of the typhoid bacillus a group agglutinin was present for the paratyphoid bacillus in about 10 per cent., and for the β-type of paratyphoid bacillus in about 8 per cent. of the cases. Group agglutinins were also found present in infection with both types of paratyphoid bacilli. Mixed infections were ruled out by the isolation of the infecting organism and by absorption experiments. The authors' investigations upon group agglutinins show that by the microscopic method the serum usually agglutinates the infecting organism in higher dilutions than it does the other members of the group, although at times the group agglutinins may be more powerful than the specific agglutinins.

The authors report two cases which gave a positive agglutination for typhoid bacilli in 1:100 dilution, but which clinical, bacteriological, and in one case autopsy findings showed to be infections with other organisms. They also report seven cases which were not typhoid fever clinically but which gave positive agglutination reactions. Two of these cases were in healthy colleagues who had to do daily with much typhoid material. In these cases a latent infection is considered as possible.

Blood cultures were made in one hundred and eighteen cases of typhoid fever. These were successful in sixty-four, or about 55 per cent. of the cases. During the first week of the disease 94 per cent. of the cases were positive, during the second week 70 per cent., and during the third week typhoid bacilli were obtained in 54 per cent. of the cases. The organisms were obtained from the blood eight times